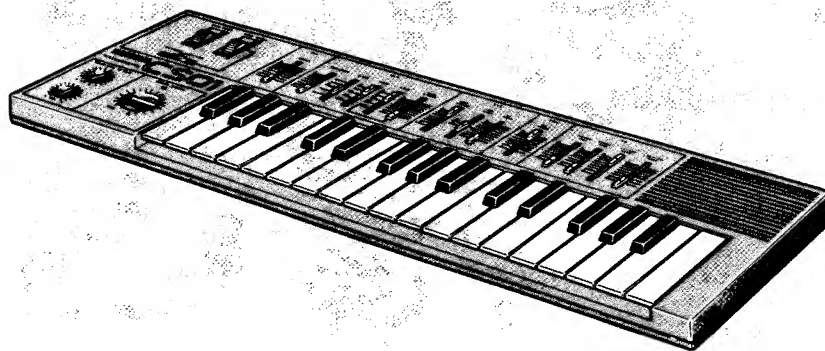


YAMAHA

COMBO SYNTHESIZER

CS 01



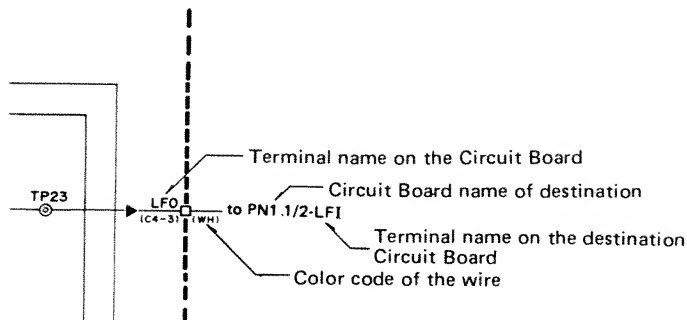
SERVICE MANUAL

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CORDING GUIDE

1 Wiring Notation

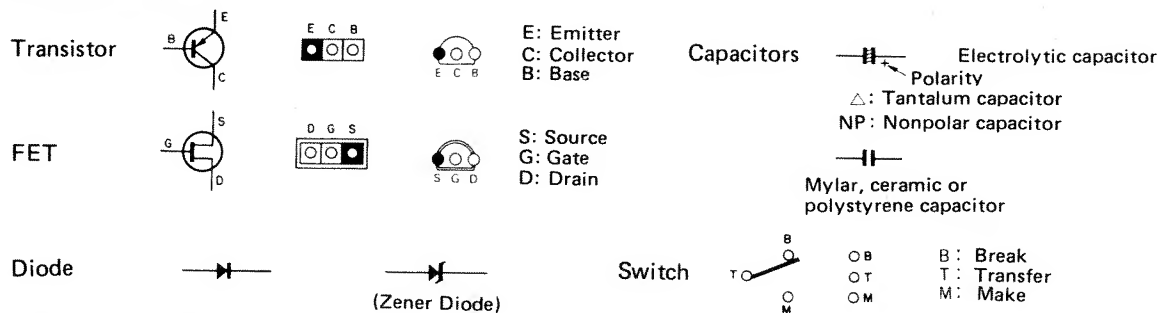


Note: Types of wire

BL Ordinary wire

BL Shield wire

2 Symbol Description



3 Abbreviations of Wire Color Codes

BLACK (クロ).....BL	BROWN (チャ).....BR	RED (アカ).....RE
ORANGE (ダイ).....OR	YELLOW (キイ).....YE	GREEN (ミド).....GR
BLUE (アオ).....BE	VIOLET (ムラ).....VI	GRAY (ハイ).....GY
WHITE (シロ).....WH	GRASS GREEN (クサ).....GG	SKY BLUE (ソラ).....SB
PINK (モモ).....PK	TRANSPARENT (トウメイ).....TR	

4 Relation of Color Coding and Notes

C	C≠	D	D≠	E	F	F≠	G	G≠	A	A≠	B
BR	RE	OR	YE	GR	BE	VI	GY	WH	GG	SB	PK
(チャ)	(アカ)	(ダイ)	(キイ)	(ミド)	(アオ)	(ムラ)	(ハイ)	(シロ)	(クサ)	(ソラ)	(モモ)

5 Logic Symbols

	MIL	YAMAHA
NOT		
NOR		
NAND		

OR

Truth Table

A	B	Y
L	L	L
H	L	H
L	H	H
H	H	H

NOR

Truth Table

A	B	Y
L	L	H
H	L	L
L	H	L
H	H	L

Exclusive OR (排他的論理和)

Truth Table

A	B	Y
L	L	L
H	L	H
L	H	H
H	H	L

AND

Truth Table

A	B	Y
L	L	L
H	L	L
L	H	L
H	H	H

NOT (Inverter)

Truth Table

A	Y
L	H
H	L

NAND

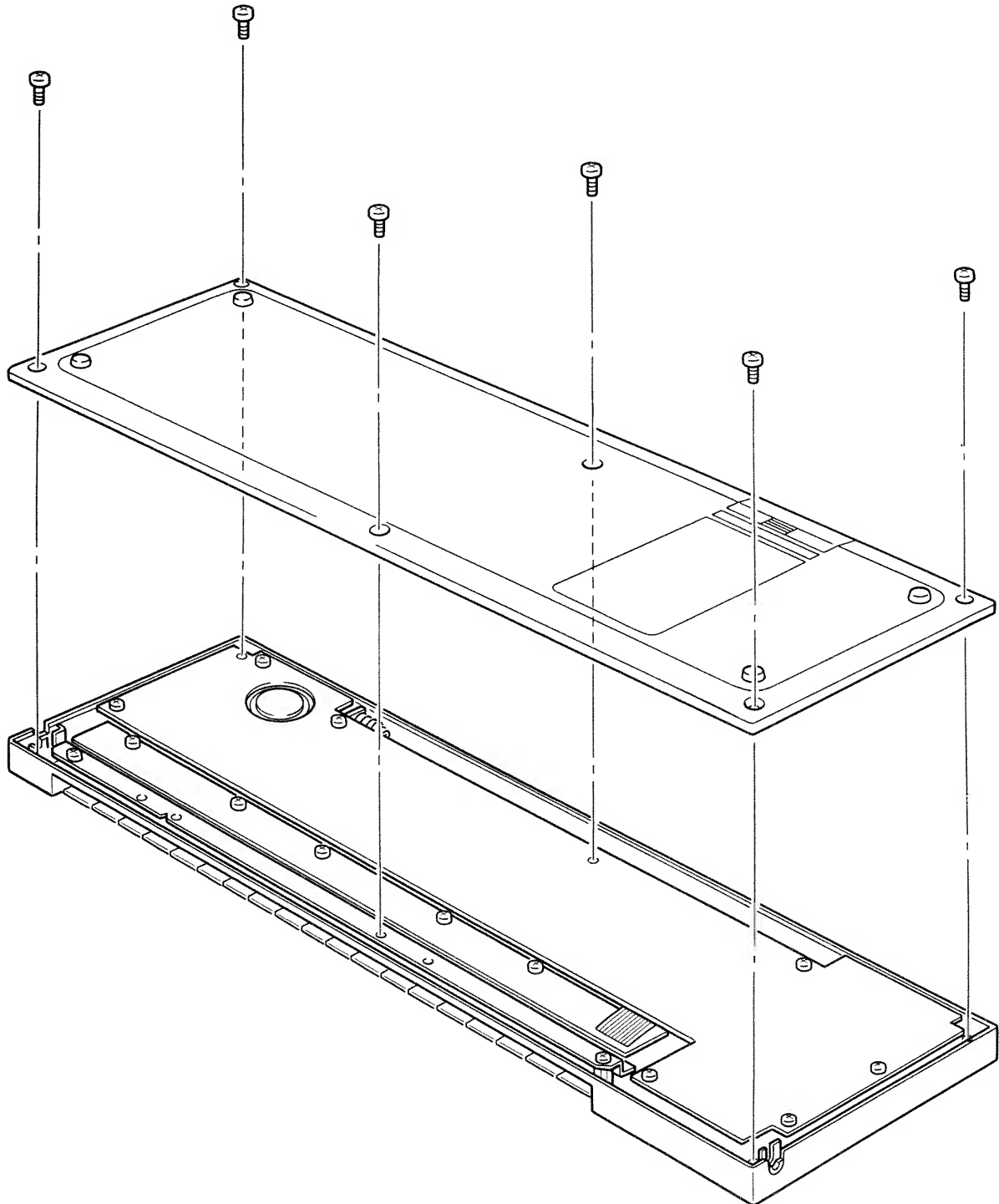
Truth Table

A	B	Y
L	L	H
H	L	H
L	H	H
H	H	L

DISASSEMBLY PROCEDURE

- **Removal of Bottom Panel**

Remove all screws illustrated above and take away the bottom panel.



SPECIFICATIONS

KEYBOARD	32 keys, F ₂ ~ C ₅
LFO	Speed 0.8 ~ 21 Hz
GLISSANDO	Speed 0 ~ 6 ± 2 Sec.
VCO	PITCH — ~ 0 ~ + FEET 4', 8', 16', 32', NOISE WAVE \wedge , \searrow , \square , \sqcup , PWM PWM Speed 0.6 ~ 12 Hz
VCF	CUT OFF L ~ H RESONANCE H/L EG DEPTH 0 ~ 10
VCA	EG DEPTH 0 ~ 10
EG	ATTACH TIME S ~ L DECAY TIME S ~ L SUSTAIN LEVEL 0 ~ 10 RELEASE TIME S ~ L
WHEELS	PITCH BEND 1 oct MODULATION VCO/VCF
BREATH CONTROL	VCF 0 ~ 10 VCA 0 ~ 10
POWER SWITCH/VOLUME	0 ~ 10
SIDE PANEL	LINE OUT 10 k Ω PHONES 8 ~ 150 Ω DC IN (use PA-1 adaptor) BREATH CONT. IN BC1
POWER SOURCE	"R6" or "AA" battery x 6 (9 V) AC Adaptor PA-1 (DC 12 V, 300 mA)
POWER CONSUMPTION	No Output, 550 mW Maximum Output, 2700 mW
DIMENSIONS (WxHxD)	489 x 36 x 160 mm (19-1/4" x 1-1/2" x 6-3/8")
WEIGHT	1.5 kg (3 lbs, 5 oz)
ACCESSORIES	Breath Controller BC1 ACAdaptor PA-1 Soft Case SC-01 Stereo Headphone MH10

Specifications are subject to change without notice.

CHECKS & ADJUSTMENT

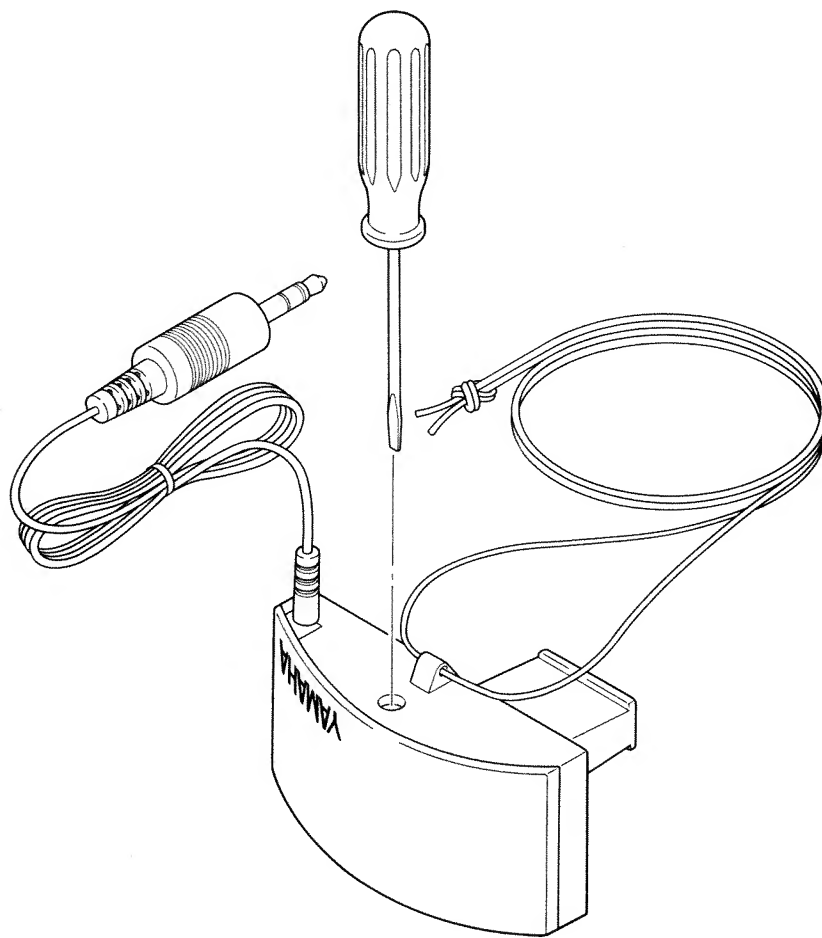
調整基準 ADJUSTMENT

Adjustment 調整項目	Measurment 測定点	Control Setting セッティング	Value 測定値	Adjustment Location 調整V R
Master OSC	TP7	<input type="text" value="PITCH"/>Center	$565.3 \pm 0.5 \text{ KHz}$	VR3
White Noise	TP1	<input type="text" value="FEET"/>WN	$-15 \pm 1 \text{ dBm}$	VR2
VCF	TP3	Set Pin 2 of <input type="text" value="FREQ CUT OFF"/> lever to 0.8V with it <input type="text" value="FREQ CUT OFF"/> レバー で、その2ピンを0.8Vにする	Peak Point	VR4
		<input type="text" value="RESONANCE"/>H <input type="text" value="FEET"/>4 <input type="text" value="WAVE"/>0 <input type="text" value="VCF EG DEPTH"/>0	2Vp-p	VR1
Battery Indicator	LED is turned on and off when battery voltage is less than $6.5 \pm 0.5 \text{ V}$ 電池の電圧が $6.5 \pm 0.5 \text{ V}$ 以下でLEDが点滅します。			

OFFSET VOLTAGE ADJUSTMENT OF BC1

The CS01 produces a sound even when the BC1 is not blown. Or no sound is produced unless BC1 is blown hard to a certain degree. In this case, adjust the trim potentiometer for the BC1 in the following manner:

1. Place the CS01 in the basic setting specified in the instruction manual, and set the breath control VCA knob to "10".
2. Connect the BC1 to the CS01.
3. Using a small screwdriver, turn the BC1 trim potentiometer all the way to the right, and sound will be produced through the CS01. Next, turn it slowly to the left and when the CS01 stops sounding, stop turning the trim potentiometer.



YAMAHA

COMBO SYNTHESIZER

CS01/BC1

PARTS LIST

03 — 06 — 04 — 013

CS01 EXPLODED VIEW

This exploded view diagram illustrates the assembly of the CS01 electronic organ console. The components are numbered as follows:

- 1**: Main console top plate.
- 2**: Bottom plate of the console.
- 3**: Small rectangular component, likely a switch or connector.
- 4**: Key frame assembly.
- 5**: Speaker driver.
- 6**: Speaker grille.
- 7**: Circular component, possibly a filter or cap.
- 8**: Small rectangular component, likely a switch or connector.
- 9**: Rear panel or support structure.
- 10**: Knob or control.
- 11**: Knob or control.
- 12**: Small rectangular component, likely a switch or connector.
- 13**: Small rectangular component, likely a switch or connector.
- 14**: Small rectangular component, likely a switch or connector.
- 15**: Spring.
- 16**: Knob or control.
- 17**: Knob or control.
- 18**: Knob or control.
- 19**: Long rectangular component, likely a switch or connector.
- 20**: Small rectangular component, likely a switch or connector.
- 21**: Small rectangular component, likely a switch or connector.
- 22**: Small rectangular component, likely a switch or connector.
- 23**: Small rectangular component, likely a switch or connector.
- 24**: Small rectangular component, likely a switch or connector.
- 25**: Small rectangular component, likely a switch or connector.
- 26**: Small rectangular component, likely a switch or connector.
- 27**: Small rectangular component, likely a switch or connector.
- 28**: Small rectangular component, likely a switch or connector.
- 29**: Keyboard unit.
- 30**: Keyboard unit.
- 31**: Keyboard unit.
- 32**: Keyboard unit.
- 33**: Keyboard unit.
- 34**: Keyboard unit.
- 35**: Keyboard unit.
- 36**: Keyboard unit.
- 37**: Knob or control.

Mechanical Parts (内装部品)

[illegible]

※: New Parts (新部品)

Electrical Parts (電気部品) (1/2)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model		
	NA 80 90 60	Circuit Board, PN	#8937	PNシート			
	iG 02 60 00	IC	iG02600	IC	VCA		
	iG 02 60 10	-do-	iG02601	"	VCF		
	iG 04 58 00	-do-	LA4138	"	Power Amp.		
	iG 05 38 00	-do-	M5232L	"	LED Driver		
※	iG 06 12 00	-do- 500mA9v	NJM78M09H	"	Regulator		
※	iG 06 82 00	-do-	TC7476BP	"	FF		
※	iT 10 15 00	-do-	YM10150	"	DTG		
	iA 10 15 70	Transistor	2SA1015(O,Y)	トランジスタ			
	iA 11 64 00	-do-	2SA1164(Y)	"			
	iC 07 52 20	-do-	2SC752(Y)	"			
	iC 18 15 70	-do-	2SC1815(O,Y)	"			
	iE 00 00 10	FET	2SK30A(Y)	FET			
	iF 00 00 40	Diode	1S1555	ダイオード			
	iF 00 03 00	Zener Diode	1S1715P	ツェナー・ダイオード			
	iF 00 08 60	-do-	WZ5.6	"			
	iF 00 11 90	LED	TLR-124	LED			
	iF 00 14 70	Zener Diode	RD6.2EB2	ツェナー・ダイオード			
	iH 00 05 90	Diode	10E-1	ダイオード			
※	HQ 46 00 10	Slide Pot, Resistor	A10KΩ	スライド・ボリューム	FREQ CUT OFF		
※	HQ 46 00 20	-do-	B10KΩ	"	PITCH,VCF EG,SASTAIN		
※	HQ 46 00 40	-do-	A1MΩ SW	"	GLISSANDO		
※	HQ 46 00 50	-do-	SB10KΩ	"	VCA EG-DEPTH		
※	HQ 46 00 60	-do-	C500KΩ	"	PWM SPEED		
※	HQ 46 00 70	-do-	RD1MΩ	"	LFO SPEED		
※	HQ 46 00 90	-do-	A2MΩ	"	ATTACK,DECA-Y, RELEASE		
※	HS 31 17 50	Rotary Pot. Resistor	B10K	ロータリー・ボリューム	BREATH CONTROL		
※	HS 31 17 60	-do-	A10K, SW	"	POWER VOLUME		
※	HS 31 18 00	-do-	A10K, 90°	"	PITCH BEND		
※	HS 31 18 10	-do-	B10K, 90°	"	MODULATION		
	HT 77 00 60	Trim Pot. Resistor	B10K	半固定抵抗	Noise		
	HT 77 00 70	-do-	B20K	"	Master Clock, VCF Q		
	HT 77 00 90	-do-	B100K	"	VCF fc		
	HU 57 71 20	Metal Film Resistor	12KΩ	金属皮膜抵抗			
	HU 57 72 70	-do-	27KΩ	"			
	HU 57 73 30	-do-	33KΩ	"			
※	HU 57 82 20	-do-	220KΩ	"			
※	HZ 00 25 60	Metal Film Resistor	2.2KΩ	リニア抵抗			
	Hi 20 99 90	Solid Resistor	10MΩ	ソリッド抵抗			
	UA 55 51 00	Mylar Capacitor	0.1	小型マイラーコン			
	UA 55 51 50	-do-	0.15	"			

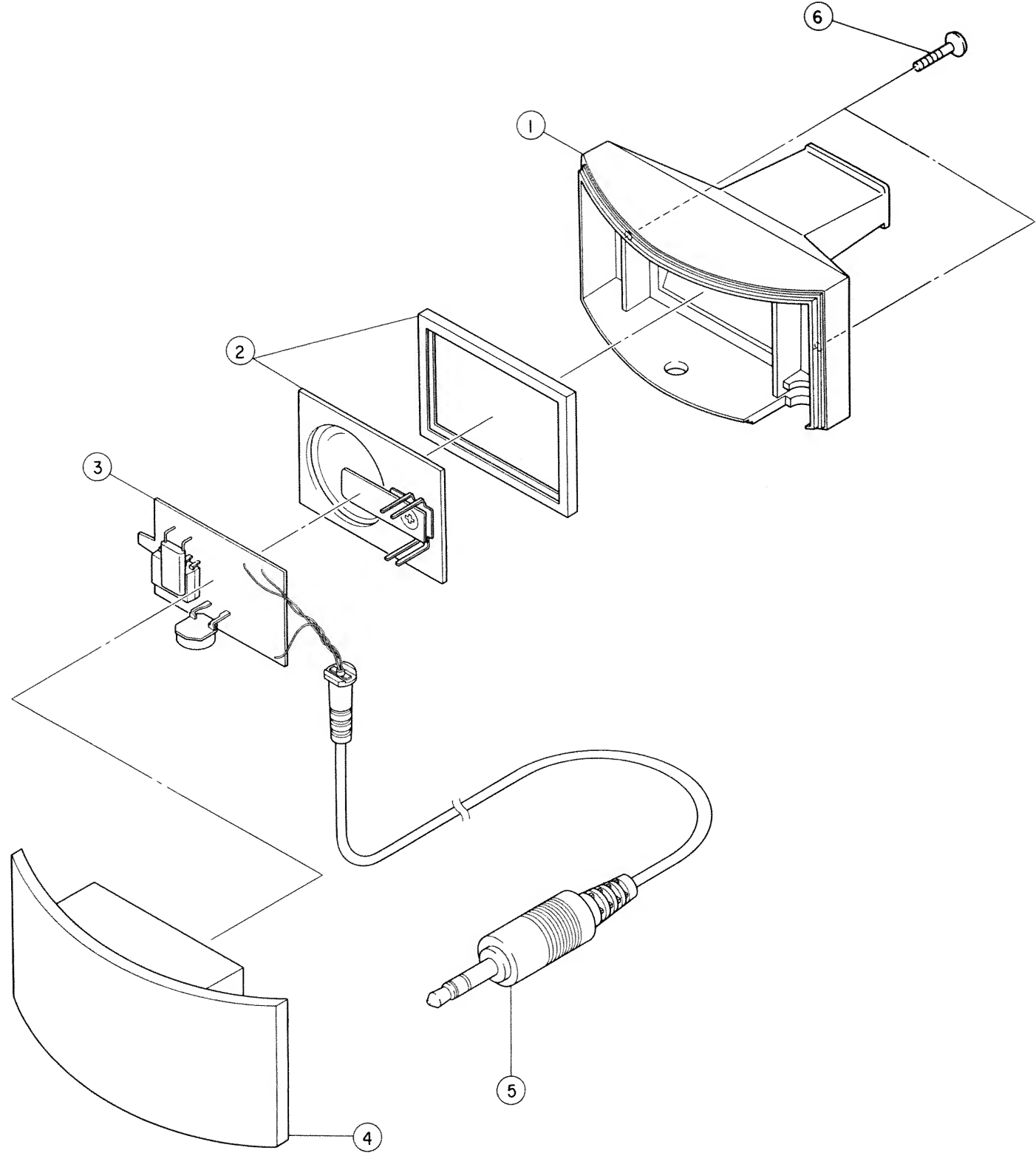
※ : New Parts (新部品)

Electrical Parts (電気部品) (2/2)

[illegible]

※ : New Parts (新部品)

BC1 EXPLODED VIEW



Mechanical Parts (内装部品)

[illegible]

※: New Parts (新部品)

Electrical Parts (電気部品)

[illegible]

※ : New Parts (新部品)

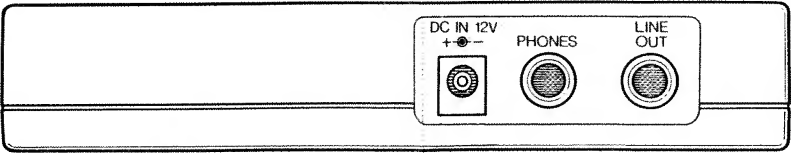
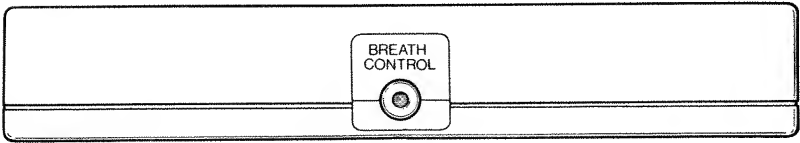
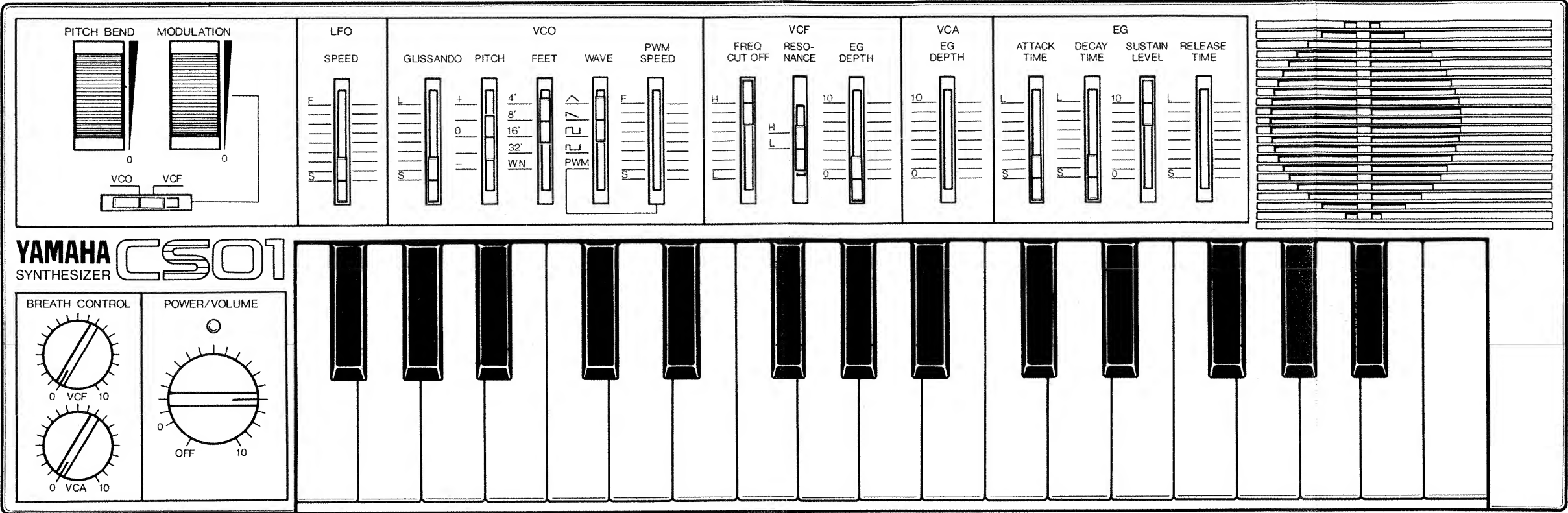
CS01 SERVICE MANUAL

1982年 5 月 初版発行

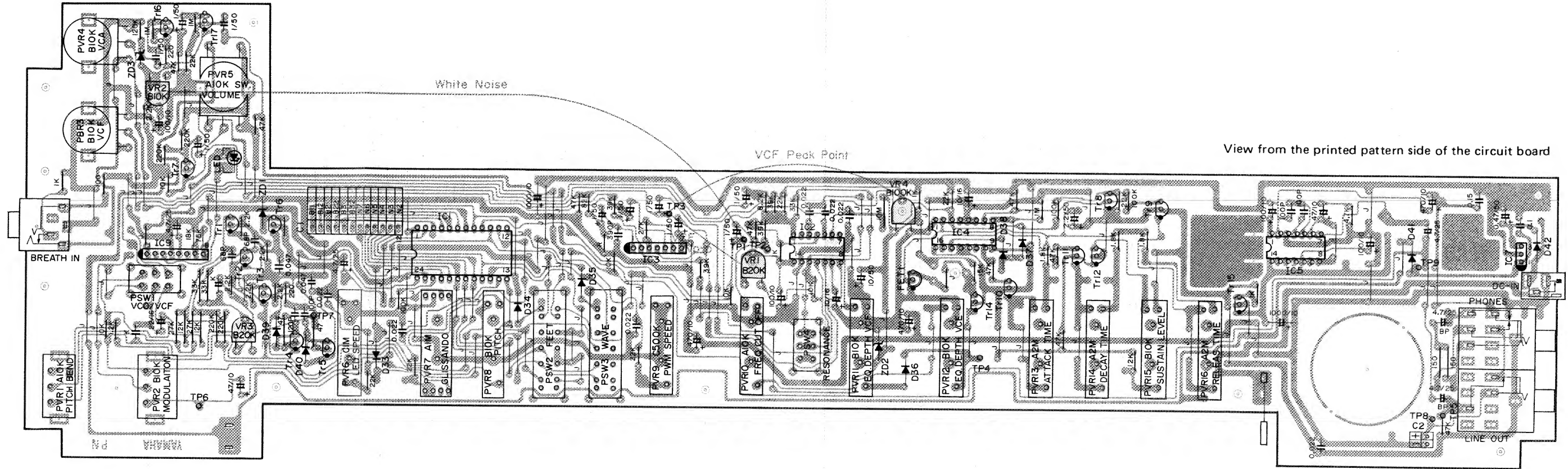
発 行 所：日本楽器製造株式会社
電音サービス課

版下・印刷：クニムラ印刷紙器株式会社

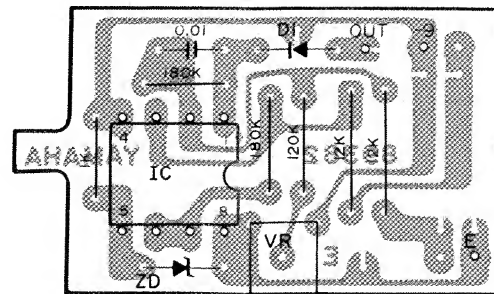
PANEL LAYOUT



PN CIRCUIT BOARD · BC CIRCUIT BOARD (BC1)



View from the component side of the circuit board



NOTE)

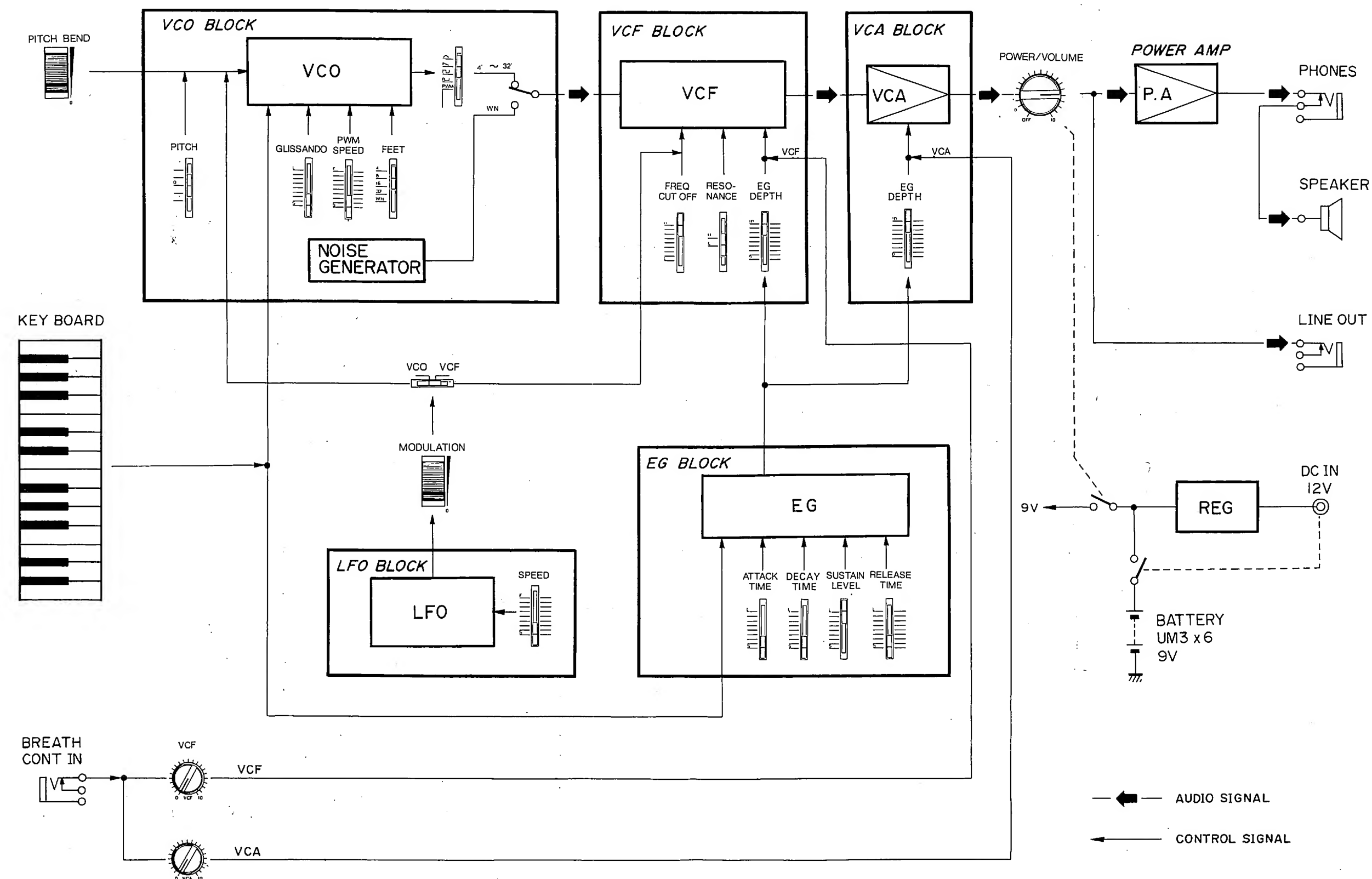
1. IC : NJM4558DV
2. Diode
Di : 1S1555
ZD : RD3.6EB1

KEC-90564-1Z KEC-90563-1X

NOTE)

1. IC
IC1 : YM10150
IC2 : iG02610
IC3 : iG02600
IC4 : TC7476BP
IC5 : LA4138
IC6 : M5232L
IC7 : NJM78M09H
2. Transistor
Tr 1 ~ 3, 5 : 2SC752 (Y)
Tr 4 : 2SA1164 (Y)
Tr 8, 9, 11, 12, 15 ~ 17 : 2SC1815 (O, Y)
Tr 8, 10, 14, 16 : 2SA1015 (O, Y)
3. FET
FET1 : 2SA30A (Y)
4. Diode
D1 ~ 40 : IS1555
D41, 42 : 10E-1
ZD1 : WZ5.6
ZD2 : RD6.2EB2
ZD3 : IS1715P
LED : TLR-124

CS01 BLOCK DIAGRAM 006892



CS01 OVERALL CIRCUIT DIAGRAM

006892

